# Before the

# Federal Communications Commission

# Washington, D.C. 20554

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| In the matter of | ) | |
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| WTB and OET Seek Comment on<br>NextNav Petition for Rulemaking | ) | PS Docket No. 24-240 |
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# COMMENTS OF THE ELECTRONIC FRONTIER FOUNDATION

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## Comments of the Electronic Frontier Foundation Regarding NextNav Petition For Rulemaking re: PS Docket No. 24-240

**September 4th, 2024**

The Electronic Frontier Foundation ("EFF") is a technology-focused non-profit organization that has been studying tech policy issues and the public good for over 30 years.[1] We represent more than 30,000 dues paying members and the public at large by advocating for technology which serves the public interest.

We hereby submit these comments in opposition to the proposal put forth by NextNav in response to the FCC Public Notice issued in August 2024[2]. Our concerns center around the negative impacts this proposal could have on public safety, innovation, established communication networks, and equity and accessibility of spectrum for amateur radio operators.

### Concerns regarding the proposal from NextNav Inc.

In their proposal NextNav proposes that the 902-928 MHZ band be reconfigured so that NextNav can have exclusive access to the majority of the spectrum to run a so called "high-quality, terrestrial complement and backup to the U.S. Global Positioning System."[3] But NextNav's own proposal makes it clear that this is essentially a land grab. NextNav seeks to increase the amount of band they have sole use of, the size of the physical region those licenses operate in, the amount of power they can use, and amount interference they can cause. NextNav wants to take band areas which currently serve as a public resource and monetize them, partly with an alternative positioning and navigation system, but also by reselling the bandwidth to mobile networks for use in 5G.

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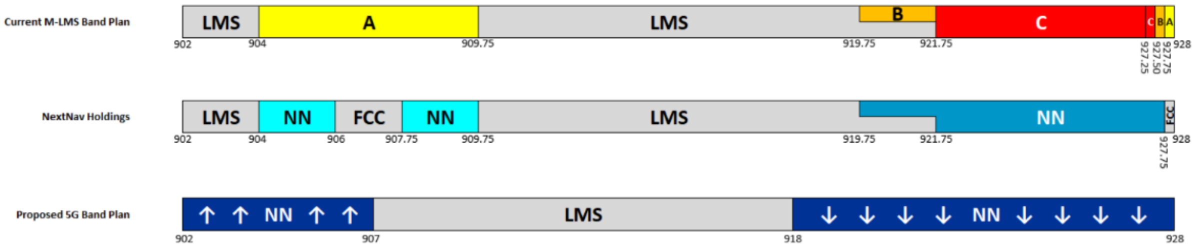
[1] https://eff.org

[2] https://docs.fcc.gov/public/attachments/DA-24-776A1.pdf

[3] https://www.fcc.gov/ecfs/document/10416238018537/1

*Figure 6: Current and Proposed LMS Band Plan*[90]



Any backup for GPS services needs to be technically on par with GPS as well. We question how effective a backup to the GPS system which only works domestically would be. After all, many of the national security interests in GPS require it to work all over the world, not just the US. NextNav correctly states “GPS signals are subject to jamming, spoofing, and other targeting events.” But it is unclear how their presumably M-LMS based location system would be more resilient to similar attacks.

In the request for comments, FCC asks “Would wireless carriers be able to use a standards-based solution to provide PNT using their networks in commercial bands other than the Lower 900 MHz Band?” If NextNav’s statement that they will operate according to 3GPP specifications is true then we see no reason that a PNT service couldn’t operate on bands already dedicated to 4g/5g service instead of the lower 900mhz band.

NextNav asserts that they will rapidly build out this location service however there is no proposed standard or progress towards implementing the location service in handsets by manufacturers or their component vendors. Furthermore NextNav parent company Progeny “has been granted multiple extensions of its construction deadlines, ultimately conditioned on assisting wireless carriers in meeting their required wireless E911 location accuracy deadlines.”[4] This does not inspire confidence they will be able to construct a nationwide PNT service in a timely manner, let alone meet their previous obligations.

It is also not clear what the market incentive is for NextNav to build a backup to the GPS system. NextNav themselves state “it is not economically feasible to deploy a widescale, standalone terrestrial PNT network. GPS is free to users (limiting price), so there is limited incentive for equipment and software developers to incorporate PNT-specific protocols into the vast array of user devices utilizing PNT services (limiting subscribers).”[5] There is a much clearer market incentive though for NextNav to sublease band space acquired under this proposal to mobile carriers for use in 5G networks.

NextNav wrongly claims that their proposal leaves plenty of room for technologies like Ham radio, the Ham based Location and Monitoring Service (LMS), LoRa (a type of long range wireless used by IoT devices and for decentralized communications), other consumer radio technologies, and other licensed uses of the spectrum. In fact, their proposal would have significant deleterious effects on these technologies. NextNav proposes that within their requested parts of the spectrum they should be able to broadcast at power levels much higher than are currently allowed (up to

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[4] https://docs.fcc.gov/public/attachments/DA-24-776A1.pdf

[5] https://www.fcc.gov/ecfs/document/10416238018537/1

1000 watts) which would cause massive interference in the portions of the spectrum allocated to ham radio and unlicensed activities. Next Nav further proposes that unlicensed devices “may not cause harmful interference and must accept harmful interference from [terrestrial navigation] systems in the 902-907/918-928 MHz band segments.”[6] This is unacceptable and would render the entire remaining band allocation nearly unusable for amateur radio and other innovative applications.

**Equity and Accessibility:** The unlicensed spectrum, specifically in the 900 MHz band, serves as a commons in the radio spectrum. It is currently a public resource, critical for a wide range of applications. Applications such as community-driven projects like Meshtastic that rely on this spectrum to operate mesh communication networks which are relied upon in emergencies, to ham radio operators, to household baby monitors. Restricting access could disproportionately impact small-scale operators and underserved communities.

**Harming Innovation:** Limiting access to unlicensed spectrum could stifle innovative new technologies and applications making use of it. One such example is the exciting new technology LoRA, a type of low power long range radio, used by Meshtastic and many “Internet of Things” (IoT) devices. This proposal would kill it before it has a chance to even be adopted by industry and the public, ceding potential technological advantages to foreign markets.[7]

**Interference and Consumer Confusion:** FCC asks what other technologies use the 900 MHz spectrum. There are myriad technologies that consumers rely on in this spectrum: baby monitors, smart meters, garage door openers, Z-Wave smart home devices, LoRA based IoT devices. Interference on the 900mhz spectrum from this proposal could lead to the breakage of millions of consumer goods, with consumers left to wonder why their technology no longer works and companies to pick up the bill by re-engineering their technologies to work on other frequencies. In their request for comments FCC asks "what are the costs for relocation and how long would it take?" We don't have enough information to come up with an estimate for this cost but with millions of devices consumers use every day needing to be relocated, the costs would be astronomical, and loss of consumer confidence impossible to put a price on. There will also likely be a significant amount of devices that are impossible to relocate as they are unable to be reconfigured or their manufacturers are no longer providing updates.

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[6] https://www.fcc.gov/ecfs/document/10607137757430/1

[7] https://meshtastic.org/blog/meshtastic-opposition-to-nextnav-proposed-changes/

**Public Safety Concerns:** Ham radio and other decentralized wireless communication networks provide critical connectivity in emergencies such as natural disasters. This proposal would reduce the amount of band available to first responders and could increase interference and overlap in a critical time.[8]

In conclusion we reject the efforts of NextNav inc. to suborn the public commons of the lower 900 MHZ spectrum to its own private use, cutting out competitors, communities and researchers and foreclosing on future innovations. The FCC should reject every part of NextNav's proposed rule making. If NextNav truly feels like their efforts to build an "alternative to

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[8] https://www.arrl.org/news/arrl-urges-protecting-the-amateur-radio-902-928-mhz-band

GPS" based on 5G are important they should simply use the parts of the radio spectrum already allocated for 5G and avoid interfering with the millions of devices using the lower 900 MHZ spectrum.

Respectfully Submitted

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